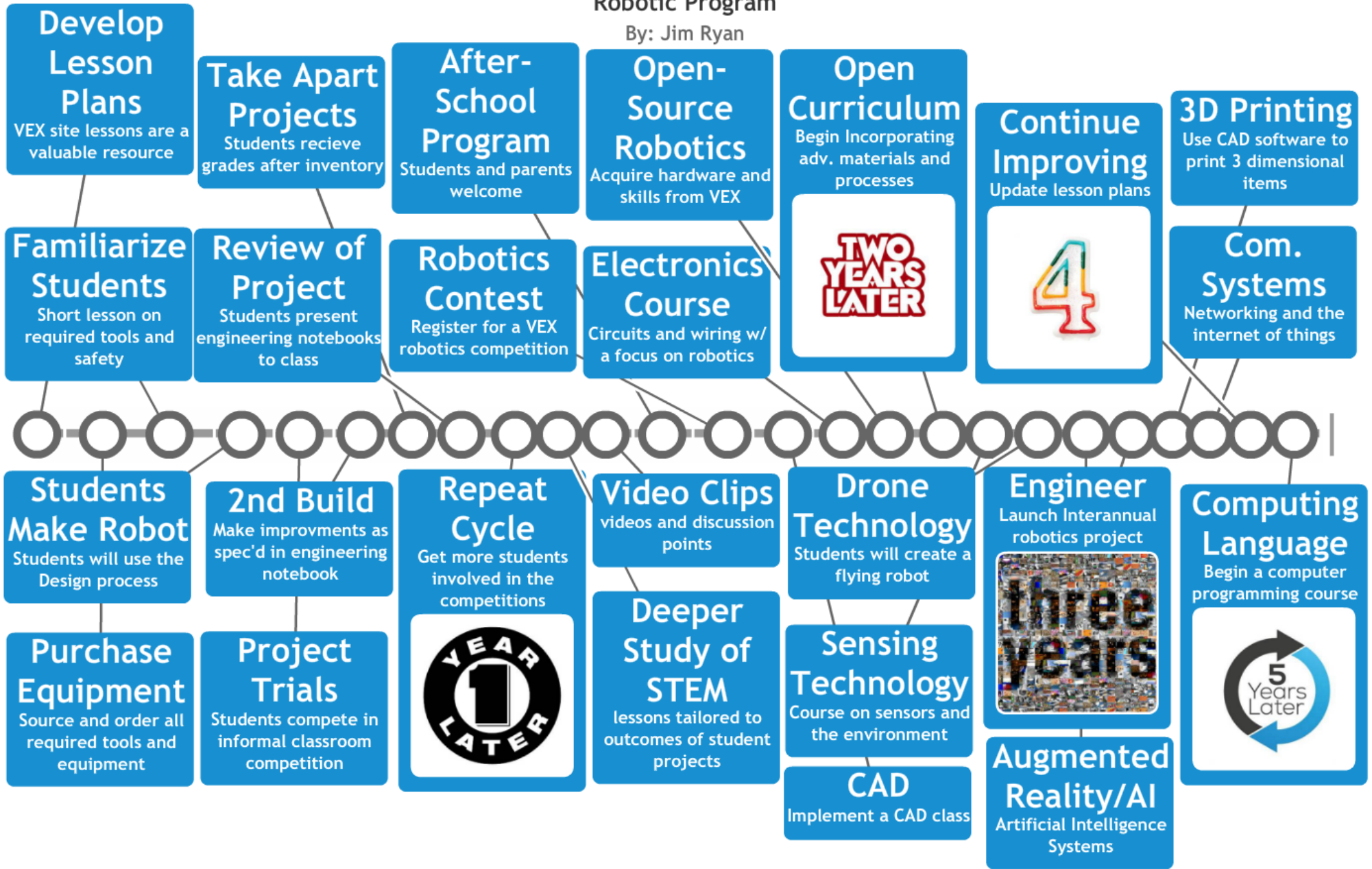


TIMELINE

Robotic Program

By: Jim Ryan



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Items:

- **Develop Lesson Plans**
Mix and match; include more or less depth after program implementation
- **Purchase Equipment**
Lead times could be up to 5 weeks. Order well before school starts
- **Familiarize Students**
Week 1 and 2 Students will organize kit components in their workstations and follow VEX instructions to create a working Protobot
- **Students Make Robot**
Week 3-5 Engineering notebook lesson, introduce robot build challenge, begin 1st build.
- **Project Trials**
Week 5 Swept away games competition 2 classes. Design review, update engineering notebooks.
- **2nd Build**
Week 6 students make changes to their original design. Compete again in round 2 of project trials
- **Take Apart Projects**
Week 7 students disassemble their projects and update their engineering notebooks
- **Review of Project**
Week 7 and 8 Students spend time in class putting together a final draft of their engineering notebooks
- **Repeat Cycle**
Poster projects, write-in to the school newsletter, plan a field-trip.
- **Deeper Study of STEM**
Week 8 and 9 present information that expands upon student's experiences as documented in their engineering notebooks
- **Video Clips**
Purchase video projection and speaker equipment to be able to incorporate a wider array of educational resources to the classroom
- **After-School Program**
Recruit charter members of an afterschool enrichment program, include any other interested teachers in the program, as well as parents
- **Robotics Contest**
Go to robotevents.org and register after-school team for a VEX robotics competition
- **CAD**
Appropriate budget for software licensing and computer lab purchases
- **Electronics Course**
Arduino has many capabilities as a platform for the study of electronic circuits. Students can design a project or follow one of the many tutorials found online
- **Open-Source Robotics**
Open up the in-school competitions to include a conglomerate of any electronics and building materials
- **Open Curriculum**
Acquire 3-D printer and required software to create student robot designs

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Items:

- **Sensing Technology**
Use the Arduino platform to develop a device that senses and interacts with its environment
- **Drone Technology**
Flight characteristics, control systems, technological constraints, explore the ethics of drone uses
- **Augmented Reality/AI**
Lessons to study in the field of intelligent agents. Augmented reality, logic, programming, applications, and implications
- **Engineer**
Understand the concept of reverse engineering through the advancement of a previous class's robotics project. Every year the project will add new layers of sophistication and functionality.
- **3D Printing**
Purchase a 3-D printer that students can use to create components for robotics projects
- **Com. Systems**
Develop lessons on using the internet to control and connect robotic devices
- **Continue Improving**
Incorporate new educational sources, Connect coursework with community by bringing in guest speakers, planning field trips, club fundraising events etc.
- **Computing Language**
Advanced coding for autonomous robot functions. APP development projects possible as well